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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,775	12/27/2001	Masaru Seita	51344	9021

7590

03/31/2004

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EXAMINER

KRUER, KEVIN R

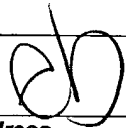
ART UNIT

PAPER NUMBER

1773

DATE MAILED: 03/31/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/034,775	Applicant(s) SEITA ET AL.	
	Examiner Kevin R Kruer	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-14 is/are pending in the application.
- 4a) Of the above claim(s) 8-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-5, 7 and 14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-5, 7 and 14, drawn to a composite material, classified in class 428, subclass 457.
 - II. Claims 8-13, drawn to a method of making a composite material, classified in class 427, subclass 299+.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product could be made by a materially different method. For example, the product could be product could be made by heating, rather than hot pressing, the composite material.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Matthews Carns on March 16, 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-5, 7, and 14. Affirmation of this election must be made by applicant in replying

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to this Office action. Claims 8-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

5. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

6. The drawings filed September 4, 2002 are accepted.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 14 is rejected under 35 U.S.C. 102(b) as being anticipated by Grunwald et al (US 3,819,497). Grunwald teaches a copper plated on a plastic surface, wherein the copper is plated in a process comprising etching the plastic surface, activating the surface, depositing an electroless copper layer, and then depositing an electrolytic copper layer (abstract). After plating, the laminate is baked at a temperature of 250-

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420°F for 0.4-1hour (col 5, lines 15+). The laminate has a bond strength between 8 and 25 pounds per inch after baking (col 5, lines 35+), which equates to a bond strength of 14 to 43N/cm.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsi-Lui (US 5,61,995) in view of Grunwald et al (US 3,819,497).

Hsi-Lui teaches a polymer surface adaptable for the acceptance of metal deposits prepared by contacting a clean, non-active, unconditioned polymer surface with a liquid activating composition containing at least one reactive conditioning agent selected from an acidic medium, salts of an acidic medium, a metal hydroxide, and a metal oxide (abstract). The polymer surface is then contacted with a metal ion selected from the group consisting of platinum, palladium, silver, gold, iron, nickel, cobalt, copper and rhodium to form an activated polymer surface (col 5, lines 46+). The surface containing the metal ion is subsequently reduced (col 5, lines 55+). The surface may be further plated with another metal layer by chemical deposition, electroless deposition (col 5, lines 71+), or electroplating (Col 6, lines 35+).

The treatment of the plastic surface with a reactive conditioning agent is understood to read on Applicant's claimed "ion exchange group introduction treatment."

Specifically, Applicant states an "ion exchange group introduction treatment" includes treatment with any chemical agent that can introduce groups having ion exchange capacity into the resin base. Such chemical agents include Lewis acids and Lewis bases (paragraph 0030 of the specification). Each of the reactive conditioning agents taught by Hsi-Lui is either a Lewis acid or Lewis base.

Hsi-Lui does not teach that the activated polymer surface or the plated activated polymer surface may be hot pressed in order to improve the binding strength between the polymer and metal coating (see paragraph 0003 of the specification). However, Grunwald teaches a copper surface plated on a plastic surface, wherein the copper surface is plated in a process comprising etching the plastic surface, activating the surface, depositing an electroless copper layer, and then depositing an electrolytic copper layer (abstract). Grunwald teaches that the interlayer adhesion of the metal plated plastic surface can be improved by baking the composite (col 5, lines 7+). Baking can be carried out after the electroless plating step or after the subsequent plating step (col 5, lines 18+). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to bake the metal plated plastic substrate taught in Hsi-Lui either after the electroless plating or after the subsequent plating. The motivation for doing so would have been to improve the interlayer adhesion of the metal plated plastic substrate.

The examiner notes that the metal-plated plastic substrate taught by Hsi-Lui in view of Grunwald is not "hot-pressed" as claimed in claim 1. However, the metal-plated plastic substrate taught by Hsi-Lui in view of Grunwald renders the claimed composite

obvious because the metal plated plastic substrate is structurally identical to the claimed composite. Specifically, Hsi-Lui in view of Grunwald teaches a metal plated plastic substrate that is post-treated so that the adhesion between the metal and the plastic substrate is greater than adhesion of the metal and the plastic substrate prior to post-treatment. The courts held that a method of making a product does not patentably distinguish that product from a product taught by the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, there is no such showing.

With regard to claimed binding strength of claims 2 and 14, Grunwald teaches that the binding strength between a plastic substrate and a deposited metal layer may be optimized by baking the metal plated plastic substrate. The courts have held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation (See MPEP 2144.05). In the present application, Grunwald teaches that binding strength of a metal plated plastic substrate is a result effective variable that can be optimized by baking. Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the binding strength of the metal plated plastic substrate taught by Hsi-Lui by baking the composite. The motivation for doing so would have been to obtain a composite with the desired binding strength.

With regard to claim 5, Hsi-Lui in view of Grunwald does not teach the claimed method limitations. However, the metal-plated plastic substrate taught by Hsi-Lui in view of Grunwald renders the claimed composite obvious because the metal plated

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plastic substrate is structurally identical to the claimed composite. The courts have held that a method of making a product does not patentably distinguish the claimed product from a product taught in the prior art unless it can be shown that the method of making the product inherently results in a materially different product. In the present application, there is no such showing.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 3,556,956; US 4,552,787, US 4,803,097, and US 4,337,279 each teaches a composite material wherein the metal layer is deposited by the claimed method.

US 5,989,653 teaches heating a polymer substrate after electroless deposition in order to significantly increase adhesion of the metallization to the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin R Kruer whose telephone number is 571-272-1510. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 571-272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "K-R Kruer".

Kevin R. Kruer
Patent Examiner-Art Unit 1773